

***Hydnophytum ferrugineum* (Rubiaceae: Hydnophytinae),  
a new species of ant-plant  
from Cape York Peninsula, Queensland**

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**Summary**

Forster, P.I. (2001). *Hydnophytum ferrugineum* (Rubiaceae: Hydnophytinae), a new species of ant-plant from Cape York Peninsula, Queensland. *Austrobaileya* 6 (1): 103–106. A new species of ant-plant *Hydnophytum ferrugineum* P.I.Forst. is described and illustrated. Notes on the distribution, habitat and conservation status are provided for the new species which is restricted to upland rainforests on granite in the McIlwraith Range, Cape York Peninsula where it is known from a small area. A conservation status of Vulnerable is recommended. A key to the Australian species of Hydnophytinae is provided.

Keywords: *Hydnophytum* - Australia; *Hydnophytum ferrugineum*; *Hydnophytum moseleyanum*; *Myrmecodia*; ant-plants.

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**Introduction**

The tribe Hydnophytinae Huxley & Jebb of the Rubiaceae comprises the genera *Anthorrhiza* Huxley & Jebb, *Hydnophytum* Jack, *Myrmecodia* Jack, *Myrmephytum* Becc. and *Squamellaria* Becc. Apart from *Hydnophytum*, the other genera have been revised in a series of papers by C.R.Huxley and M.H.P.Jebb (Huxley & Jebb 1991, 1993; Jebb 1991). The genus *Hydnophytum* Jack comprises c. 50 species and although a monograph has been promised (e.g. Huxley 1993) it has yet to materialise. A single species of *Hydnophytum* has been long recognised to occur in Australia and was initially identified as *H. formicarium* Becc. by Bailey (1900). Huxley (1982) referred this species to *H. papuanum* Becc., but later annotated herbarium material as *H. moseleyanum* Becc. the name by which it is now known in Queensland (Reynolds & Halford 1997).

The presence of a second species of *Hydnophytum* in Australia was alluded to firstly by Huxley (1982) as “*Hydnophytum* sp. 1” based on a collection by the redoubtable L.J.Brass (#19885, but incorrectly as 1885) at Leo Creek in the McIlwraith Range on Cape York Peninsula and secondly by D.L.Jones in Elliot & Jones (1990) as “*Hydnophytum*

species. An apparently undescribed species which occurs in the higher ranges of Cape York Peninsula”. The Brass collection as held at BRI is sterile and this may have precluded Huxley from describing it. It has now been possible to collect fertile material of this entity enabling a description to be made and a name formally published.

**Taxonomy**

***Hydnophytum ferrugineum* P.I.Forst., sp. nov.** Ab *Hydnophyto moseleyano* bracteis inflorescentiae trichomatibus ferrugineis densis usque ad 2 mm longis obsitis, foliis valde discoloribus superne atroviridibus nitidis (adversum folia plus minus concoloria superne pallide viridia impolita), venis lateralibus 5 vel 6 in costae latere utroque (adversum venas laterales 3–4 in costae latere utroque) differt. **Typus:** Queensland. COOK DISTRICT: Timber Reserve 14, Leo Creek, 9 July 1997, P.I.Forster PIF21406 *et al.* (holo: BRI [3 sheets + spirit]; iso: K, MEL).

Epiphytic subshrub with succulent tuber and stems. Tuber horizontal to pendent, globose-spherical to variously misshapen, somewhat mounded, unridged, up to 30 cm diameter,

spineless, glabrous, surface often with entrance holes for ants over the entire surface, cream-silver; chambers complex and forming a honeycomb of chambers. Stems solitary, rarely 2 or 3, up to 60 cm long, much branched, up to 10 mm diameter, spineless, glabrous, clypeoli absent. Interpetiolar stipules triangular-lanceolate, 3–3.5 mm long, 2–3.5 mm wide, caducous, glabrous. Leaves mesomorphic; petiole 2–6 mm long, 1.5–2 mm wide, generally as broad as long, channelled above, glabrous; lamina elliptic to elliptic-ovate, 10–60 mm long, 7–35 mm wide, strongly discoloured, upper surface dark glossy green and venation obscure, lower surface pale matt-green and with 5 or 6 indistinct lateral veins; tip obtuse to rounded; base cuneate. Inflorescence sessile, laterally displaced to the leaf axil, surrounded by dense bracts, each bract with dense ferruginous trichomes to 2 mm long. Flowers 4-merous. Corolla 4–5 mm long, c. 4 mm diameter, white; tube 2–3.5 mm long, 1.8–2 mm diameter, externally glabrous, internally with dense trichomes in top of throat forming a connivent mass around anthers; lobes lanceolate-ovate, fleshy and cucullate, upwardly apiculate, c. 2 mm long, 1.2–1.5 mm wide; anthers inserted, 1–1.1 mm long and c. 0.5 mm wide; stigma 2-lobed, c. 2.5 mm long. Fruit a fleshy oblong drupe, c. 6 mm long, white. Fig. 1.

**Additional specimen examined:** Queensland. COOK DISTRICT: Leo Creek, Upper Nesbit River, Aug 1948, Brass 19885 (BRI).

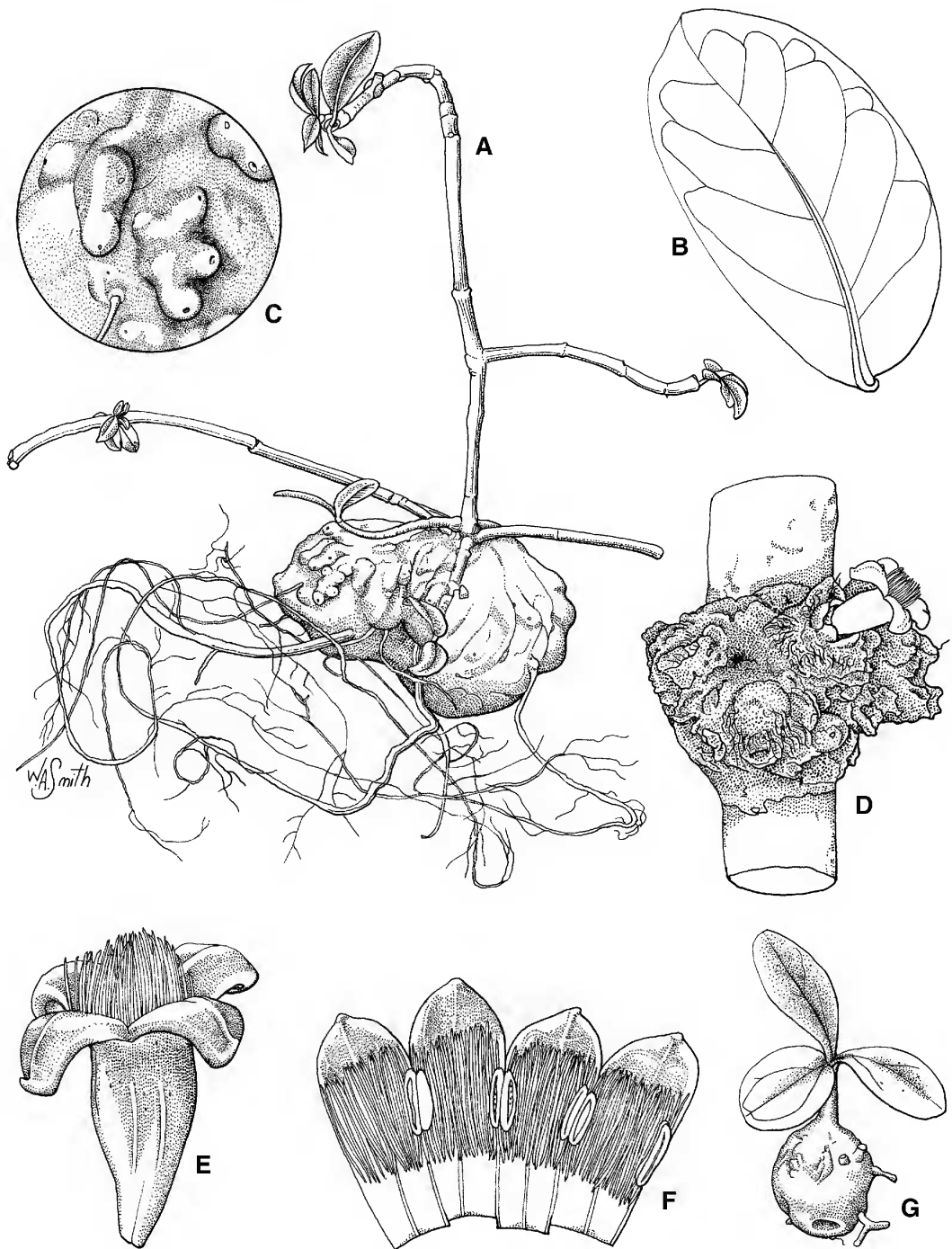
**Distribution & habitat:** *Hydnophytum ferrugineum* is thus far known only from the headwaters of Leo Creek in the McIlwraith Range on Cape York Peninsula. Plants grow as epiphytes in the canopy of complex notophyll vineforest on granite substrates at altitudes above 500 m.

**Notes:** This species is clearly distinct because of the strongly discoloured, glossy foliage and the ferruginous trichomes that are copiously distributed in the inflorescences. When compared to *H. moseleyanum* it differs in the inflorescence bracts beset with dense ferruginous trichomes up to 2 mm long (versus sparse uncoloured trichomes less than 0.5 mm long) and the leaves being strongly discoloured and dark glossy-green above and with 5 or 6 lateral veins per side of midrib (versus more or less concolorous and pale matt-green above and with 3 or 4 lateral veins per side of midrib). None of the other New Guinea species represented in the BRI collections appears closely similar.

Although the genera *Hydnophytum* and *Myrmecodia* are readily distinguishable, it is felt opportune to provide a key to all of the Australian species of Hydnophytinae. There is now increased horticultural interest in these plants worldwide (e.g. Plummer 2000) and aids to their accurate identification are required.

**Key to the Australian species of Hydnophytinae**

- 1. Tuber and stem with spines, especially around ant exit-holes and inflorescences; stems thick, branching sparse or absent; inflorescences sunken ..... 2
- Tuber and stems spineless; stems slender and freely branching; inflorescences pedunculate to sessile ..... 4
- 2. Stems several from tuber; leaf lamina fleshy-succulent; fruit white ..... **Myrmecodia beccarii** Hook.f.
- Stems generally single from tuber, rarely with side branches; leaf lamina coriaceous to leathery; fruit orange-red to pink ..... 3
- 3. Stems with spiny, shield-like outgrowths (clypeoli) at the base of each leaf ..... **Myrmecodia platytyrea** Becc.
- Stems without clypeoli, but with elongated depressions filled with bracts and hairs at the base of each leaf ..... **Myrmecodia tuberosa** Jack



**Fig. 1.** *Hydnophytum ferrugineum*. A. whole plant.  $\times 0.3$ . B. undersurface of leaf showing venation pattern.  $\times 2$ . C. close-up of tuber surface showing ant exit-holes.  $\times 1$ . D. node with axillary inflorescence and emerging flower.  $\times 3$ . E. side view of flower.  $\times 8$ . F. dissection of corolla showing anthers and hairs in throat.  $\times 8$ . G. seedling.  $\times 2$ . All from Forster 21406 (BRI). Del. W. Smith.

4. Leaf lamina with 5 or 6 lateral nerves per side of midrib, strongly  
 discolorous, dark green and glossy above; inflorescence with copious  
 ferruginous indumentum ..... **Hydnophytum ferrugineum** P.I.Forst.  
 Leaf lamina with 3 or 4 lateral nerves per side of midrib, more or less  
 concolorous, pale green and matt above; inflorescences with scattered  
 uncoloured indumentum ..... **Hydnophytum moseleyanum** Becc.

**Conservation status:** *H. ferrugineum* is locally common but appears to be very restricted in its distribution. Apart from damage by occasional cyclones there are no apparent natural threats. This species is however potentially under threat by hobbyist collectors of ant-plants. The Leo Creek locality is well-known for a number of endemic or rarely encountered Orchidaceae taxa and has been exploited by collectors over the last 30 years. Orchid collectors often also collect ant-plants and so the formal description of this species will undoubtedly arouse further interest in the locality. Large, mature ant-plants are very susceptible to damage and their removal is rarely followed by successful re-establishment. It is possible to grow ant-plants from seed and this is the best way to establish an ex-situ population of this species. Suggestions for the culture and propagation of *H. ferrugineum* may be found in D.L.Jones in Elliot & Jones (1990) or adapted from Forster (2000).

Applying IUCN guidelines (Anon. 1994), a category of 'vulnerable' is proposed (Criteria C2, D1, D2).

**Etymology:** The specific epithet is based on the Latin *ferrugineus* and alludes to the colour of the dense hairs present on the inflorescences of this species.

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